

## Claims

1. An improved protocol adapter having circuitry and programs for in-vehicle networks, the improvement comprising:  
reflashing of firmware.

2. An improved protocol adapter having circuitry and programs for in-vehicle networks, the improvement comprising:  
means for indicating activity on a RS232 bus between the adapter and a PC.

3. An improved protocol adapter having circuitry and programs for in-vehicle networks according to claim 2 wherein the means for indicating comprises:  
at least one LED to visually indicate activity on a RS232 bus between the adapter and a PC.

4. An improved protocol adapter having circuitry and programs for in-vehicle networks, the improvement comprising:  
means for indicating a program being executed by the protocol adapter.

5. An improved protocol adapter having circuitry and programs for in-vehicle networks according to claim 4 wherein the means for indicating comprises:

multiple color emitting LED's.

6. An improved protocol adapter having circuitry and programs for in-vehicle networks, the improvement comprising:

means for identifying a program being executed by the protocol adapter.

7. An improved protocol adapter having circuitry and programs for in-vehicle networks according to claim 6 wherein the means for identifying comprises:

multiple color emitting LED's.

8. An improved protocol adapter having circuitry and programs for in-vehicle networks, the improvement comprising:

a pass-through to emulate at least an other protocol adapter.

9. An improved protocol adapter having circuitry and programs for in-vehicle networks according to claim 8, the improvement comprising:

at least one multiple color emitting LED to indicate the operation of a pass-through to emulate at least an other protocol adapter.